

# FOCUS

A PUBLICATION OF THE

MISSOURI DEPARTMENT OF HEALTH & SENIOR SERVICES  
 BUREAU OF VITAL STATISTICS  
 JEFFERSON CITY, MISSOURI 65102-0570  
 (573) 751-6272

July 2018

## 2017 Vital Statistics

Missouri resident deaths reached a record high number for the fifth consecutive year, increasing by 3.4 percent from 59,824 in 2016 to 61,866 in 2017 (See Table 1). The state life expectancy dropped 0.2 years to 77.1 years, 0.7 years less than the peak of 77.8 years in 2012. Missouri's life expectancy was 1.5 years less than 78.6 years, the latest available national life expectancy in 2016. Life expectancy for Missouri males decreased from 74.7 in 2016 to 74.4 years in 2017. Male life expectancy is down 0.8 years since 2012. Female life expectancy decreased to 79.9 years in 2017, 0.1 years less than 2016, and is down 0.4 year since 2012. The female advantage in life expectancy compared to males in Missouri increased from 5.1 years in 2012 to 5.5 years in 2017.

As reflected in Table 2, deaths from nine of the

ten leading causes of death increased in 2017 compared with 2016. The one exception was chronic lung disease, which is largely due to smoking. The ten leading causes of deaths remained in the same order in 2017 as in 2016. Heart disease continues to be the leading cause followed by cancer, chronic lung disease, unintentional injuries, stroke, Alzheimer's disease, diabetes, nephritis (kidney disease), pneumonia and influenza, and suicide. The largest percentage increases in deaths by cause were for pneumonia and influenza (11.4 percent) and Alzheimer's disease (10.6 percent). The pneumonia and influenza mortality increase reflects flu epidemics at both the beginning of the year and the end of the year. These epidemics may have affected the increases in mortality for chronic diseases such as

**Table 1**  
**Vital Statistics for Missouri: 2007, 2016 and Provisional 2017**

|                  | <i>Numbers</i> |        |        | <i>Rates per 1,000 Population</i> |       |       |
|------------------|----------------|--------|--------|-----------------------------------|-------|-------|
|                  | 2007           | 2016   | 2017   | 2007                              | 2016  | 2017  |
| Births           | 81,883         | 74,664 | 73,017 | 13.9                              | 12.3  | 11.9  |
| Deaths           | 53,937         | 59,824 | 61,866 | 9.2                               | 9.8   | 10.1  |
| Natural increase | 27,946         | 14,840 | 11,151 | 4.7                               | 2.4   | 1.8   |
| Marriages        | 40,505         | 41,747 | 40,316 | 6.9                               | 6.9   | 6.6   |
| Divorces         | 22,223         | 19,997 | 19,187 | 3.8                               | 3.3   | 3.1   |
| Infant deaths    | 613            | 490    | 455    | 7.5*                              | 6.6*  | 6.2*  |
| Abortions        | 11,470         | 7,254  | 6,790  | 145.5*                            | 97.2* | 93.0* |
| Population       | 5,888          | 6,091  | 6,114  |                                   |       |       |

\*Per 1,000 live births

(continued on next page)

(Focus continued)

heart disease, cancer, stroke and Alzheimer’s disease.

The decreases in life expectancy, particularly among males, were primarily related to recent increases in external causes of death such as drug overdoses, suicides and homicides. These causes largely induce premature death to persons in their 20s, 30s and 40s. The opioid epidemic continued in 2017, with 951 opioid-related deaths, compared to 908 in 2016 and just 394 ten years earlier in 2007. The rate of increase declined in 2017 to 4.7 percent compared to 35 percent in 2016. Fentanyl was principal drug most affecting the continued high rate of opioid drug overdoses. In 2017, 583 of the 951 opioid deaths or 61 percent were related to fentanyl, compared to 415 (45 percent) in 2016 and 155 (23 percent) in 2015. Suicides increased slightly in 2017 to 1,151 from 1,132 in 2016, but rose by more than 42 percent since 2007. Homicides, while not among the ten leading causes, have increased dramatically in recent years, jumping 14.7 percent from 2016 to 2017 and 68 percent since 2013.

Since 2013, there have been homicide increases in nearly all demographic subcategories. Homicides were higher among both genders, whites and African-Americans, all major age groups, and in urban and rural areas. The largest increases were among males, African-Americans, and St. Louis area residents. In 2017, 82 percent of the 654 Missouri homicide victims were male, 64 percent were African-American, and two-thirds occurred among St. Louis City (24 percent), St. Louis County (23 percent) or Kansas City (20 percent) residents. According to data from National Center for Health Statistics, Missouri had the highest black homicide rate (45.5 per 100,000 population) among all 50 states in 2016 (the latest available year). The number of black homicide deaths to Missourians increased by an additional 20 percent in 2017. About 86 percent of the 654 Missouri homicide deaths in 2017 were firearm-related compared with 74 percent in 2013.

Missouri resident live births decreased for the tenth consecutive year in 2017 as 73,017 babies

**Table 2**  
**Leading Causes of Death with Rates: Missouri Residents 2007, 2016 and 2017**

|                                | <i>Numbers</i> |        |        | <i>Rates per 100,000 Population</i> |       |         | <i>Percent Change</i> |           |
|--------------------------------|----------------|--------|--------|-------------------------------------|-------|---------|-----------------------|-----------|
|                                | 2007           | 2016   | 2017   | 2007                                | 2016  | 2017    | 2007-2017             | 2016-2017 |
| <u>Leading Causes of Death</u> |                |        |        |                                     |       |         |                       |           |
| Heart                          | 14,237         | 14,569 | 14,818 | 241.8                               | 239.2 | 242.4   | 4.1                   | 1.7       |
| Cancer                         | 12,354         | 12,691 | 12,969 | 209.8                               | 208.4 | 212.1   | 5.0                   | 2.2       |
| Lung cancer                    | 3,857          | 3,706  | 3,691  | 65.5                                | 60.8  | 60.4    | -4.3                  | -0.4      |
| Chronic lung disease           | 3,070          | 3,960  | 3,941  | 52.1                                | 65.0  | 64.5    | 28.4                  | -0.5      |
| Unintentional injury           | 2,930          | 3,610  | 3,773  | 49.8                                | 59.3  | 61.7    | 28.8                  | 4.5       |
| Motor vehicle                  | 1,015          | 999    | 994    | 17.2                                | 16.4  | 16.3    | -2.1                  | -0.5      |
| Falls                          | 700            | 756    | 776    | 11.9                                | 12.4  | 12.7    | 10.9                  | 2.6       |
| Poisonings                     | 651            | 1,221  | 1,271  | 11.1                                | 20.0  | 20.8    | 95.2                  | 4.1       |
| Other                          | 564            | 634    | 732    | 9.6                                 | 10.4  | 12.0    | 29.8                  | 15.5      |
| Stroke                         | 3,226          | 3,063  | 3,159  | 54.8                                | 50.3  | 51.7    | -2.1                  | 3.1       |
| Alzheimer's disease            | 1,682          | 2,302  | 2,545  | 28.6                                | 37.8  | 41.6    | 51.3                  | 10.6      |
| Diabetes                       | 1,435          | 1,508  | 1,606  | 24.4                                | 24.8  | 26.3    | 11.9                  | 6.5       |
| Nephritis & nephrosis          | 1,193          | 1,481  | 1,515  | 20.3                                | 24.3  | 24.8    | 27.0                  | 2.3       |
| Pneumonia & influenza          | 1,312          | 1,149  | 1,280  | 22.3                                | 18.9  | 20.9    | -2.4                  | 11.4      |
| Suicide                        | 810            | 1,132  | 1,151  | 13.8                                | 18.6  | 18.8    | 42.1                  | 1.7       |
| <u>Other Causes</u>            |                |        |        |                                     |       |         |                       |           |
| Homicide                       | 394            | 570    | 654    | 6.7                                 | 9.4   | 10.7    | 66.0                  | 14.7      |
| Opioid-Related                 | 384            | 908    | 951    | 6.5                                 | 14.9  | 15.6    | 147.7                 | 4.7       |
| Total Deaths                   | 53,937         | 59,824 | 61,866 | 916.0                               | 982.1 | 1,012.0 | 14.7                  | 3.4       |

(continued on next page)

(Focus continued)

were born compared with 74,664 in 2016 (Table 1). Missouri births have decreased by 10.8 percent since reaching a peak of 81,883 in 2007. The Missouri birth rate of 11.9 per 1,000 population is the lowest on record. Similar decreases in births have been occurring nationally.

Teen births continued to decrease in 2017 moving from 4,536 in 2016 to 4,321 births in 2017 born to mothers under the age of 20. This is more than a 53 percent decrease from the 2007 count of 9,339. Early teen (less than age 18) births also decreased, moving from 1,136 in 2016 to 1,020 in 2017. This is 63 percent lower than the count ten

years earlier in 2007. As Table 3 reflects, teen births have experienced a substantial decrease among both white and African-American teen mothers.

The infant death rate decreased in 2017 from 6.6 in 2016 to 6.2 per 1,000 live births (See Table 3). It is 17 percent lower than the 7.5 rate ten years earlier in 2007. Missouri's 2017 infant death rate of 6.2 per 1,000 live births was 5 percent higher than the most recent national rate of 5.9 in 2015. The 2017 Missouri infant death rate for African-Americans of 13.0 per 1,000 live births was more than 2.5 times the white infant

**Table 3**  
**Trends in Maternal and Child Health Statistics: Missouri 2007, 2016 and 2017**

|                                  | <i>Numbers</i> |        |        | <i>Percents</i> |       |       |
|----------------------------------|----------------|--------|--------|-----------------|-------|-------|
|                                  | 2007           | 2016   | 2017   | 2007            | 2016  | 2017  |
| Infant Deaths                    | 613            | 490    | 455    | 7.5*            | 6.6*  | 6.2*  |
| White                            | 389            | 298    | 275    | 5.9*            | 5.4*  | 5.1*  |
| Black                            | 207            | 137    | 136    | 16.3*           | 13.2* | 13.0* |
| Low Birth Weight                 | 6,456          | 6,499  | 6,357  | 7.9             | 8.7   | 8.7   |
| White                            | 4,539          | 4,124  | 3,984  | 6.9             | 7.5   | 7.4   |
| Black                            | 1,705          | 1,572  | 1,612  | 13.5            | 15.2  | 15.4  |
| Inadequate Prenatal Care         | 9,242          | 13,204 | 13,471 | 11.9            | 19.2  | 20.0  |
| White                            | 6,129          | 7,979  | 8,148  | 9.6             | 15.5  | 16.1  |
| Black                            | 2,635          | 2,950  | 3,091  | 23.0            | 32.8  | 35.0  |
| Teen(10-19) Births               | 9,339          | 4,536  | 4,321  | 11.4            | 6.1   | 5.9   |
| White                            | 6,635          | 2,933  | 2,764  | 10.0            | 5.3   | 5.2   |
| Black                            | 2,462          | 896    | 874    | 19.4            | 8.6   | 8.4   |
| Early Teen (10-17) Births        | 2,792          | 1,136  | 1,020  | 3.4             | 1.5   | 1.4   |
| Preterm (<37 weeks) (Obst. Est.) | 8,209          | 7,595  | 7,707  | 10.0            | 10.2  | 10.6  |
| Multiple Births                  | 2,679          | 2,687  | 2,712  | 3.3             | 3.6   | 3.7   |
| Birth Spacing<18 mos.            | 5,837          | 5,160  | 5,106  | 12.8            | 11.8  | 11.9  |
| Out-of Wedlock Births            | 33,173         | 29,750 | 29,161 | 40.5            | 39.8  | 39.9  |
| Smoking During Pregnancy         | 14,534         | 11,290 | 10,452 | 17.9            | 15.3  | 14.5  |
| Mother Obese                     | 17,601         | 19,913 | 20,175 | 22.9            | 27.0  | 28.0  |
| Medicaid Births                  | 38,344         | 28,815 | 27,915 | 47.5            | 39.0  | 38.8  |
| WIC Births                       | 34,636         | 28,110 | 26,740 | 43.0            | 38.4  | 37.5  |
| Food Stamps Births               | 19,966         | 19,010 | 18,473 | 25.5            | 27.5  | 27.4  |
| C-Sections                       | 25,313         | 22,515 | 21,914 | 30.9            | 30.2  | 30.1  |
| Live Births                      | 81,883         | 74,664 | 73,017 |                 |       |       |

\*Infant Death rates are per 1,000 live births.

(continued on next page)

(Focus continued)

death rate of 5.1.

The rate of low birth weight (less than 2,500 grams) remained at the record high of 8.7 percent in 2017 and 2016 compared with the rate of 7.9 in 2007. The 2017 low birth weight rate for African-American infants was 15.4 percent, more than double the rate for white infants of 7.4 percent. The related rate of preterm births (delivering before 37 weeks of pregnancy) increased in 2017 to 10.6 percent from 10.2 percent in 2016 and 10.0 percent in 2007. These increases may be related to increases in C-Sections and induced labor among pre-term babies in recent years.

The rate of inadequate prenatal care increased in 2017 from 19.2 percent in 2016 to 20.0 percent. The rate in 2017 was 68 percent higher than the 2007 rate of 11.9 percent, but this was largely due to a change in data collection techniques beginning in 2010. Inadequate prenatal care is defined as fewer than five visits for preterm pregnancies or fewer than eight visits for term pregnancies or prenatal care beginning after the first four months of pregnancy. The rate uses the number of live births with known prenatal care as the denominator.

Other maternal and child health indicators presented in Table 3 show the following for 2017:

- The rate of out-of-wedlock births increased slightly from 39.8 to 39.9 percent between 2016 and 2017.
- Multiple births increase from 3.6 percent to 3.7 percent of births.
- Short (less than 18 months) spacing between births increased slightly from 11.8 percent in 2016 to 11.9 percent in 2017.
- The number and rate of Medicaid and WIC births both decreased, as did the number of mothers on Food Stamps.
- Abortions (See Table 1) decreased 6.7 percent in 2017 as 6,790 Missouri resident pregnancies were terminated compared with 7,275 in 2016. The 2017 number represents a 41 percent decrease from the 11,470 abortions ten years earlier.
- C-sections decreased slightly during the last year, from 30.2 percent in 2016 to 30.1 percent in 2017.
- The rate of births to obese (BMI>30) mothers increased to 28.0 percent in 2016 from 27.0 in

2016 and 22.9 in 2007.

Marriages decreased from 41,747 in 2016 to 40,316 in 2017. The number of same-sex marriages decreased by 18.6 percent in 2017 from 1,577 in 2016 to 1,283 in 2017. Divorces decreased by 4.1 percent in 2017 as 19,187 Missouri marriages were dissolved compared with 19,997 in 2016. The marriage to divorce ratio increased slightly from 2.09 in 2016 to 2.10 in 2017.

In summary, Missouri mortality continued at records levels in 2017, reflecting both increases in chronic disease deaths among the elderly and premature deaths from external causes such as drug overdoses and homicides. On the other hand, positive trends in 2017 included a decrease in infant mortality, a continued decrease in teen pregnancy and a reduction in smoking-related causes of death.

The sharp increase in homicide mortality is particularly troubling. The death data only allows analysis of the victims of homicides, and not the perpetrators or the reasons behind the homicides. The Department of Health and Senior Services (DHSS) has a grant from the Centers for Disease Control called the National Violent Death Reporting System (NVDRS) to better monitor homicides and suicides by collecting additional data from coroners and medical examiners, law enforcement and other sources. NVDRS data are used to track the occurrence of violence-related fatal injuries and assist public health authorities in the development, implementation and evaluation of programs to reduce violent deaths. Missouri just started this project in 2017, but should be better able to evaluate reasons for changes in violent deaths in the future.